ThioBright™ Green SDS; Doc# F17-6636-1-B; Effective: 10/11/2017; Supersedes: F17-6636-1-A; Page 1 of 6

ImpunoChemistry TECHNOLOGIESLLC

SAFETY DATA SHEET (SDS) according to Regulation (EC) No. 830/2015 amending 1907/2006

Sectio	n 1: Identification of the su	bstance/mixture and of th	e company/underta	Iking
1.1	Product identifier:		ThioBright™ C	
1.1a	Other means of identification	on:	g	
1.1b	Alternative produ	ct name(s)/ synonyms:		
1.1c	Product number/		6636	
1.1d	Internal identifica		ThioBright [™] Greer	
1.2	Relevant identified uses of mixture and uses advised		For research use o	only. Not for use in diagnostic procedures.
1.2a	Brief description of what the		Fluorescent glutath	nione detection reagent
	intended to do:		J	<u> </u>
1.3	Details of the supplier of	the SDS:		
1.3a	Name:			Technologies, LLC (ICT)
1.3b	Address:			ue South, Suite 155
1.3c 1.3d	City, State, Zip, C Phone number:	Jounity	Bloomington, MN 5 1-800-829-3194 ar	
1.3e	Fax number:		952-888-8988	10 332-000-07 00
1.3f	Website:		www.immunochem	nistry.com
1.3g	Email:		help@immunocher	
1.3h	Contact person a		Quality Documenta	
1.4	Emergency telephone nu	mber:		94 (USA & Canada) or 952-888-8788 world wide;
				n-5 pm central time USA, Monday through Friday
				s). Chemtrec 24-hour access within USA and 4-9300 or +1 703-527-3887. Collect calls accepted.
				+300001 + 1703 - 327 - 3007. Collect calls accepted.
Sectio	n 2: Hazards identification			
2.1	Classification of the subs	tance or mixture:		
2.1a	Product is a:	(= 0))) () = 0 (0 0 0 0	Substance.	
2.1b	Classification according to {CLP}:	(EC) No. 1272/2008	Does not meet the	criteria for classification.
2.1c	The most important advers		Refer to Sections 9	Ð-12.
	health, and environmental e	effects:		
2.2	Label elements:		None.	
2.2a	GHS label elements, includ statements:	ing precautionary	None.	
2.2b	Contains:		None.	
2.2c	Labeling in accordance with		None.	
2.2d	Hazard Pictograms (Hazard	d Symbols):	None.	
2.2e	Signal word:		None.	
2.2f	Hazard statements:		None.	
2.2g 2.2h	Precautionary statements: Supplementary precaution	statements:	None.	
2.211	Other hazards:		No additional inform	mation available.
2.3a	Does the chemical meet the	e criteria for PBT or vPvB?	Not applicable.	
2.3b	Other hazards which do no		No information ava	ilable.
	n 3: Composition/informat	on on ingredients		
3.1	Substance:		Item is a substance	
	3.1a Chemical identity: 3.1b Common name, synor	nyms etc.	ThioBright™ Greer None.	1
	3.1c CAS number and	iyinə, etc	3.1e %	3.1f Classification according to (EC) No.
	other unique identifiers:	3.1d EC number:	Concentration:	<u>1272/2008 {CLP}:</u>
	None.	None.	100%	Not classified.
3.1g	Chemical identity of any im		None known.	
	or individual constituent oth			
	constituent, which is itself of			
	contributes to the classifica identifier, trade name, ident			
	Other information on the su		None.	
3.1h	Other information on the su	bolarioo.	NONC.	
3.1h	Other mormation on the so		None.	
3.1h	Other mormation on the so		None.	
3.1h	Other mormation on the so			

Sectio	on 4: First aid measures	
4.1	Description of first aid measures:	If concerned, get medical attention/advice and provide physician with
		SDS information. Wash contaminated clothing before reuse. Never
		give anything by mouth to an unconscious person.
4.1a	Inhalation:	Due to the small packaging the risk of inhalation is minimal. Remove to
		fresh air and keep at rest in a comfortable position for breathing. If not
		breathing, give artificial respiration. Rinse nose and mouth with water.
		Get medical attention if any discomfort continues.
4.1b	Skin contact:	Wash skin thoroughly with soap and water for several minutes;
		continue to rinse for at least 15 minutes. Remove any contaminated
		clothing and shoes and wash thoroughly before reuse. Get medical
4.1c	Eye contact:	attention if any discomfort continues. Promptly wash eyes with plenty of water while lifting the eyelids. Make
4.10	Eye contact.	sure to remove any contact lenses from the eyes before rinsing.
		Continue to rinse for at least 15 minutes. Get medical attention if any
		discomfort continues.
4.1d	Ingestion:	NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK
		FLUIDS! Rinse mouth thoroughly. Do not induce vomiting without
		advice from poison control center or medical professional. Get medical
		attention if any discomfort continues.
4.2	Most important symptoms and effects, both acute	
4.0	and delayed:	Maria and a second from an and the first of
4.2a	Inhalation:	May cause coughing or mild irritation.
4.2b	Skin contact:	Prolonged skin contact may cause mild irritation.
4.2c 4.2d	Eye contact: Ingestion:	May cause temporary eye irritation. May cause discomfort if swallowed.
4.20 4.3	Indication of any immediate medical attention and	No specific first aid measures noted, but first aid may still be required
7.5	special treatment needed:	in case of accidental exposure, inhalation, or ingestion of this product.
		If in doubt, get medical attention promptly!
4.3a	Notes to physician/first responder:	Treat symptomatically. Refer to Sections 5-8 for advice on personal
		protective equipment.
	on 5: Firefighting measures	
5.1	Extinguishing media:	Use fire-extinguishing media appropriate for the surrounding materials.
5.1a	Suitable extinguishing media:	Water spray, foam, dry powder, or carbon dioxide.
5.1b 5.2	Unsuitable extinguishing media: Special hazards arising from the substance or	None known. Product is not explosive. No dangerous reactions known under normal
J.2	mixture:	conditions of use.
5.2a	Hazardous combustion products:	In case of fire, toxic gases may be formed of carbon monoxide (CO),
0.24		carbon dioxide (CO_2 ; CO_x). None under normal conditions.
5.2b	Unusual fire & explosion hazards:	No unusual fire or explosion hazards noted.
5.2c	Protective measures in fire:	Use protective equipment appropriate for surrounding materials.
5.3	Advice for firefighters:	Keep away from heat, hot surfaces, sparks, open flames and other
		ignition sources. No smoking.
5.3a	Special firefighting procedures:	No apositio firatishting procedure siyon
		No specific firefighting procedure given.
5.3b	Special protective equipment and precautions for	Wear full protective clothing, including self-contained breathing
5.3b	Special protective equipment and precautions for firefighters:	Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards
5.3b		Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open
5.3b		Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards
	firefighters: on 6: Accidental release measures	Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	firefighters:	Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Sectio	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good
Sectio 6.1	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures:	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable
Sectio 6.1	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures:	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures:	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8).
Sectio 6.1	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good No specific emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protection 8).
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing protective clother than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes,
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition.
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable
Sectio 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if
Sectic 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures:	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned.
Sectic 6.1 6.1a	firefighters: on 6: Accidental release measures Personal precautions, protective equipment, and <u>emergency procedures:</u> General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal	 Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product presents no special fire hazards in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned.

ThioBright[™] Green SDS; Doc# F17-6636-1-B; Effective: 10/11/2017; Supersedes: F17-6636-1-A; Page 3 of 6

6.2	Environmental precautions:	Do not allow to enter drains, sewers, or watercourses.
6.3	Methods and materials for containment and	
0.3		Contain any spills with dikes or absorbent materials to prevent
	clean up:	migration and entry into sewers or water sources. Place in a suitable
		container for disposal in accordance with local waste regulations (see
		Section 13). Wash spill area thoroughly with plenty of soap and water.
		Avoid contact with skin or inhalation of spillage, dust, or vapor.
6.4	Reference to other sections:	Refer to Sections 8 and 13 for additional information.
0	n 7. Han dian and standar	
	n 7: Handling and storage	
7.1	Precautions for safe handling:	Do not handle until all safety precautions have been read and
		understood. Avoid creation of aerosol/mist/dust. Avoid inhalation of
		vapors/mist/dust. Prevent contact with skin and eyes. Use appropriate
		personal protection equipment (PPE). Thoroughly wash hands and
		contaminated areas with water and soap before leaving the work site.
7.1a	Prevent handling of incompatible substances or	Keep away from sources of ignition. Avoid contact with strong acids and strong oxidizers.
1.1d	mixtures:	Avoid contact with strong acids and strong oxidizers.
7.1b	Advice on general occupational hygiene:	Do not eat, drink, or smoke in work areas. Wash hands after use.
		Remove contaminated clothing and protective equipment before
		entering eating areas. Good personal hygiene is necessary. Follow
		good laboratory hygiene and safety practices.
7.2	Conditions for safe storage, including any	Refer to product label. Store in cool place. Keep container tightly
	incompatibilities:	closed in a dry and well-ventilated place. Containers which are opened
		must be carefully resealed and kept upright to prevent leakage. Protect
		musi be carefully research and kept upright to prevent leakage. Protect
		material from long-term exposure to light. Avoid spills and release into
		the environment; keep away from watercourses.
7.3	Specific end use(s):	For research use only. Not for use in diagnostic procedures.
Santia	n & Experience controls/personal protection	
Sectio 8.1	n 8: Exposure controls/personal protection Control parameters:	
8.1a		Not available.
8.1a	Occupational exposure limits, such as chemical	Not available.
	identity, standard, TWA-8 hours (time weighted	
	average), STEL-15 minutes (short term exposure	
	limit), etc.: WEL = Workplace Exposure Limit. Sk =	
	can be absorbed through skin.	
8.1b	Appropriate engineering controls:	
		·
8.1c	Individual protection measures, such as personal	Wear gloves, protective goggles, and lab coat.
	protective equipment:	
8.1d	Safety symbols:	
8.2	Exposure controls:	
8.2a	Process conditions:	Provide eyewash station.
8.2b	Engineering controls:	Ensure that eyewash stations and safety showers are proximal to the
0.20	Engineering controls.	
0.0		workstation location.
8.2c	Ventilation controls:	Provide adequate ventilation.
8.2d	Reference to other sections:	Refer to Section 5 for additional information.
8.2e	Eye/face protection:	Wear approved chemical safety goggles where eye exposure is
		reasonably probable or face shield if risk of splashing.
8.2f	Skin protection:	Wear apron or protective clothing in case of contact.
8.2g	Hand protection:	Use suitable protective gloves if risk of skin contact.
8.2h	Respiratory equipment:	Where risk assessment shows air-purifying respirators are appropriate
		use a full-face respirator with multi-purpose combination (US) or type
		ABEK (EN 14387) respirator cartridges as a backup to engineering
		controls. If the respirator is the sole means of protection, use a full-fac
		supplied air respirator. Use respirators and components tested and
		approved under appropriate government standards such as NIOSH
		(US) or CEN (EU).
8.2i	Other protection:	Wear appropriate clothing to avoid skin contact.
8.2j	Hygiene measures:	DO NOT SMOKE IN WORK AREA! Wash at the end of each work shi
		and before eating, smoking, and using the toilet. Promptly remove any
		clothing that becomes contaminated. Use appropriate skin cream to
		prevent drying of skin. When using do not eat, drink, or smoke. Wash
		promptly with soap and water if skin becomes contaminated.
8.2k	Thermal hazards:	None known under normal conditions of use.
8.21	Environmental exposure controls:	Not determined.

9.1	9: Physical and chemical properties Information on basic physical and chemical	
<i>.</i>	properties:	
9.1a	Appearance (physical state, color, etc.):	Powder, dust.
9.1b	Odor:	No characteristic odor.
9.1c	Odor threshold:	Not determined.
9.1d	pH:	Not determined.
9.1e	Melting point/freezing point (°C):	Not determined.
9.1f	Initial boiling point and boiling range:	Not determined.
9.1g	Flash point (°C):	Not determined.
9.1h	Evaporation rate:	Not determined.
9.1i	Flammability (solid, gas):	Not determined.
9.1j	Upper/lower flammability or explosive limits:	Not determined.
9.1k	Vapor pressure:	Not determined.
9.11	Vapor density (Air =1):	Not determined.
9.1m	Relative density:	Not determined.
9.1n	Solubility(ies):	Insoluble in water; soluble in organic solvents.
9.10	Partition coefficient (N-octanol/water):	Not determined.
).1p	Auto-ignition temperature (°C):	Not determined.
).1q	Decomposition temperature (°C):	Not determined.
).1r	Viscosity:	Not determined.
).1s	Explosive properties:	Not determined.
).1t	Oxidizing properties:	Not determined.
9.2	Other information:	None.
).2a	Other physical or chemical parameters:	None.
Section	10: Stability and reactivity	
10.1	Reactivity:	No data available.
0.2	Chemical stability:	Stable under normal recommended storage conditions.
0.3	Possibility of hazardous reactions:	Hazardous polymerization: no data available.
10.4	Conditions to avoid:	To avoid product degradation, avoid exposure to high temperatures of
		direct sunlight or light.
10.5	Incompatible materials:	No data available.
10.6 Section	Hazardous decomposition products: 11: Toxicological information	No data available. None under normal conditions.
10.6 Section 11.1	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects:	None under normal conditions.
10.6 Section 11.1 11.1a	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name:	None under normal conditions. . ThioBright™ Green
10.6 Section 11.1 11.1a 11.1b	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity:	None under normal conditions. . ThioBright™ Green Not determined.
Section 11.1 11.1a 11.1b 11.1c	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation:	None under normal conditions. . ThioBright™ Green Not determined. Not determined.
Section 11.1 11.1a 11.1b 11.1c 11.1d	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation:	None under normal conditions. . ThioBright™ Green Not determined. Not determined. Not determined. Not determined. Not determined.
Section 1.11 1.12 1.15 1.15 1.10 1.11 1.10	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization:	None under normal conditions. . ThioBright™ Green Not determined.
Section 11.1 11.1a 11.1b 11.1b 11.1c 11.1d 11.1e 11.1f	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity:	None under normal conditions. . ThioBright™ Green Not determined.
10.6 Section 11.1 11.1a 11.1b 11.1c 11.1c 11.1d 11.1g	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity:	None under normal conditions. . ThioBright™ Green Not determined.
Section 1.1 1.1a 1.1b 1.1c 1.1c 1.1d 1.1d 1.1e 1.1f 1.1g 1.1h	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity:	None under normal conditions. . ThioBright™ Green Not determined.
Section 11.1 11.1a 11.1b 11.1c 11.1d 11.1c 11.1d 11.1f 11.1g 11.1h 11.1i	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure:	None under normal conditions. . ThioBright™ Green Not determined.
Section 11.1 11.1a 11.1b 11.1c 11.1c 11.1d 11.1e 11.1f 11.1g 11.1h 11.1i 11.1j	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure:	None under normal conditions. . ThioBright™ Green Not determined.
Section 11.1 11.1a 11.1b 11.1c 11.1d 11.1c 11.1f 11.1f 11.1f 11.1h 11.1i 11.1j 11.1k	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard:	None under normal conditions. . ThioBright™ Green Not determined.
Section 11.1 11.1a 11.1b 11.1b 11.1c 11.1d 11.1d 11.1f 11.1g 11.1h 11.1h 11.1i 11.1j 11.1k	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure	None under normal conditions. . ThioBright™ Green Not determined.
Section 11.1 11.1a 11.1b 11.1b 11.1c 11.1	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):	None under normal conditions. . ThioBright™ Green Not determined. Naterna and/or eye contact; inhalation of vapors/mist/dust.
Section 11.1 11.1a 11.1b 11.1b 11.1c 11.1c 11.1d 11.1d 11.1f 11.1f 11.1h 11.1h 11.1h 11.1k 11.1k 11.1m	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion:	None under normal conditions. . ThioBright™ Green Not determined. Nate determined. Nate determined. Nate determined. Nate determined. Nate determined. May enter by skin and/or eye contact; inhalation of vapors/mist/dust. May cause discomfort if swallowed.
Section 11.1 11.1a 11.1b 11.1c 11.1c 11.1c 11.1d 11.1g 11.1h 11.1j 11.1k 11.1k 11.1k 11.1m	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):	None under normal conditions. . ThioBright™ Green Not determined. Nay enter by skin and/or eye contact; inhalation of vapors/mist/dust. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system
Section 11.1 11.1a 11.1b 11.1c 11.1c 11.1d 11.1c 11.1f 11.1f 11.1f 11.1h 11.1h 11.1k 11.1k 11.1h 11.1h 11.1h 11.1h	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion:	None under normal conditions. . ThioBright™ Green Not determined. Nay enter by skin and/or eye contact; inhalation of vapors/mist/dust. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing
IO.6 Section 11.1 11.1a 11.1b 11.1c 11.1c 11.1d 11.1c 11.1d 11.1d 11.1d 11.1d 11.1d 11.1d 11.1d 11.1d 11.1k 11.1k 11.1k 11.1n 11.1n 11.1n 11.1n	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Skin contact:	None under normal conditions. . ThioBright™ Green Not determined. Nay enter by skin and/or eye contact; inhalation of vapors/mist/dust. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin.
Section 11.1 11.1a 11.1b 11.1c 11.1c 11.1c 11.1d 11.1g 11.1h 11.1j 11.1k 11.1k 11.1k 11.1m	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion:	None under normal conditions. . ThioBright™ Green Not determined. Nay enter by skin and/or eye contact; inhalation of vapors/mist/dust. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing
Bection 11.1 11.1a 11.1b 11.1c	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Skin contact: Eye contact:	None under normal conditions. . ThioBright™ Green Not determined. Nay cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation.
Section 11.1 11.1a 11.1b 11.1c	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Skin contact: Eye contact: Symptoms related to the physical, chemical and	None under normal conditions. . ThioBright™ Green Not determined. Nay cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation.
Section 11.1 11.1a 11.1b 11.1c	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic	None under normal conditions. . ThioBright™ Green Not determined. Nay enter by skin and/or eye contact; inhalation of vapors/mist/dust. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation. No specific symptoms noted.
Bection 11.1 11.1a 11.1a 11.1b 11.1c 11.1c 11.1d	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute	None under normal conditions. . ThioBright™ Green Not determined. Nay enter by skin and/or eye contact; inhalation of vapors/mist/dust. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory syster and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation. No specific symptoms noted.
Bection 11.1 11.1a 11.1a 11.1b 11.1c 11.1c 11.1d	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates):	None under normal conditions. . ThioBright™ Green Not determined. May enter by skin and/or eye contact; inhalation of vapors/mist/dust. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation. No specific symptoms noted. Not determined. Not determined. Not determined. Not determined.
IO.6 Section I1.1 I1.1a I1.1b I1.1c I1.1d	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects:	None under normal conditions. . ThioBright™ Green Not determined. Nay cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory syster and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation. No specific symptoms noted. Not determined. Not determined. Not determined. Not determined.
Section 11.1 11.1a 11.1a 11.1b 11.1c 11.1c 11.1d	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data:	None under normal conditions. . ThioBright™ Green Not determined. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation. No specific symptoms noted. Not determined.
IO.6 Section I1.1 I1.1a I1.1b I1.1c I1.1d I1.1d I1.1d I1.1d I1.1d I1.1d I1.1d I1.1f I1.1f I1.1f I1.1g I1.1h I1.1h I1.1h I1.1h I1.1n	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures:	None under normal conditions. . ThioBright™ Green Not determined. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation. No specific symptoms noted. Not determined.
IO.6 Section 11.1 11.1a 11.1b 11.1c 11.1d 11.1d 11.1d 11.1d 11.1d 11.1f 11.1g 11.1n	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information:	None under normal conditions. . ThioBright™ Green Not determined. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation. No specific symptoms noted. Not determined. Not applicable. Not applicable.
IO.6 Section 11.1 11.1a 11.1b 11.1c 11.1d 11.1d 11.1d 11.1d 11.1d 11.1f	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixtures: Mixture vs. substance information: Classification by National Toxicity Program (NTP):	None under normal conditions. . ThioBright™ Green Not determined. May enter by skin and/or eye contact; inhalation of vapors/mist/dust. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation. No specific symptoms noted. Not determined. Not applicable. Not applicable. Not classif
IO.6 Section 11.1 11.1a 11.1b 11.1c 11.1d 11.1d 11.1d 11.1d 11.1d 11.1f 11.1g 11.1n	Hazardous decomposition products: 11: Toxicological information Information on toxicological effects: Name: Acute toxicity: Skin corrosion/irritation: Serious eye damage/irritation: Respiratory or skin sensitization: Germ cell mutagenicity: Carcinogenicity: Reproductive toxicity: STOT-single exposure: STOT-repeated exposure: Aspiration hazard: Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact): Ingestion: Inhalation: Skin contact: Eye contact: Symptoms related to the physical, chemical and toxicological characteristics: Delayed and immediate effects as well as chronic effects from short and long term exposure: Numerical measures of toxicity (such as acute toxicity estimates): Interactive effects: Absence of specific data: Mixtures: Mixture vs. substance information:	None under normal conditions. . ThioBright™ Green Not determined. May cause discomfort if swallowed. In high concentrations, dust may irritate throat and respiratory system and cause coughing Dust may irritate skin. Spray and dust in the eyes may cause irritation. No specific symptoms noted. Not determined. Not applicable.

ThioBright™ Green SDS; Doc# F17-6636-1-B; Effective: 10/11/2017; Supersedes: F17-6636-1-A; Page 5 of 6

Section	n 12: Ecological information	
12.1	Toxicity:	
12.1a	Name:	ThioBright™ Green.
12.1b	Ecotoxicity (aquatic and terrestrial, where available):	Not determined.
12.2	Persistence and degradability:	There are no data on the degradability of this product.
12.3	Bioaccumulative potential:	No data available on bioaccumulation.
12.4	Mobility in soil:	No data available.
12.5	Results of PBT and vPvB assessment:	Not determined.
12.6	Other adverse effects:	No data available.
Sectio	n 13: Disposal considerations	
13.1	Waste treatment methods:	When handling waste, consideration should be made to the safety
		precautions applying to handling of the product.
13.1a	Description of waste residues and information on	Dispose of waste and residues in accordance with local authority
	their safe handling and methods of disposal,	requirements. For the safety of persons conducting disposal, recycling
	including the disposal of any contaminated	or reclamation activities, please refer to the information in Section 8
	packaging:	(exposure controls and personal protection) of the SDS.
Section	n 14: Transport information	
14.1	UN number:	Not applicable.
14.2	UN proper shipping name:	Not applicable.
14.3	Transport hazard class(es):	Not applicable.
14.4	Packing group:	Not applicable.
14.5	Environmental hazards:	
14.5a	Is it environmentally dangerous according to UN	No.
	Model Regulations (IMDG Code, ADR, RID, and	
	ADN)?:	
14.5b	Is it a marine pollutant according to the IMDG	No.
	code?:	
14.6	Special precautions for user:	None known.
14.7	Transport in bulk according to Annex II of	Not applicable.
	MARPOL and the IBC code:	
14.7a	Other information:	The product is not considered a dangerous good for transport.
14.7a 14.7b	Other information: Classification for other modes of transport:	The product is not considered a dangerous good for transport. Contact supplier.
14.7b	Classification for other modes of transport:	
14.7b Sectio	Classification for other modes of transport: 15: Regulatory information	
14.7b	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental	
14.7b Sectio	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance	
14.7b Section 15.1	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture:	Contact supplier.
14.7b Section 15.1	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental	
14.7b Section 15.1 15.1a	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question:	Contact supplier. . None known.
14.7b Section 15.1 15.1a 15.1b	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313):	Contact supplier. . None known. Not listed.
14.7b Section 15.1 15.1a 15.1b 15.1c	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know:	Contact supplier.
14.7b Section 15.1 15.1a 15.1b 15.1c 15.1d	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know:	Contact supplier. None known. Not listed. Not listed. Not listed. Not listed.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1e	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know:	Contact supplier.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1d 15.1e 15.1f	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components:	Contact supplier. None known. Not listed. Not listed. Not listed. Not listed.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1d 15.1e 15.1f 15.1g	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}:	Contact supplier. None known. Not listed.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1d 15.1e 15.1f 15.1g 15.1h	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization:	Contact supplier. None known. Not listed.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1e 15.1f 15.1g 15.1h 15.1i	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern:	Contact supplier. None known. Not listed.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1e 15.1f 15.1g 15.1h 15.1i	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization:	Contact supplier. Not listed. Classification and labeling of substances and preparations dangerous
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1e 15.1f 15.1g 15.1h 15.1i 15.1j	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice:	Contact supplier. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1c 15.1d 15.1g 15.1h 15.1i 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1c 15.1d 15.1g 15.1h 15.1i 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice:	Contact supplier. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1c 15.1f 15.1f 15.1j 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier. Not listed. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulatior
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1c 15.1f 15.1f 15.1j 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulatior (EC) No 1907/2006 of the European Parliament and of the Council of
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1c 15.1f 15.1f 15.1f 15.1j 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier. Not listed. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulatior (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation,
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1c 15.1f 15.1f 15.1j 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier. Not listed. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulatior (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1c 15.1d 15.1g 15.1h 15.1i 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier. None known. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulatior (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1d 15.1f 15.1g 15.1h 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier. None known. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission
14.7b Sectio i	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier. None known. Not listed. Not listed. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1d 15.1f 15.1g 15.1h 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier. None known. Not listed. Not listed. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1c 15.1d 15.1c 15.1f 15.1i 15.1i 15.1i 15.1i 15.1k 15.1l	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes: EU legislation references:	Contact supplier. None known. Not listed. Not listed. Not listed. Classification and labeling of substances and preparations dangerous for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures {CLP Regulation}. EC 830/2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1d 15.1f 15.1g 15.1h 15.1i 15.1j 15.1k	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes:	Contact supplier.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1c 15.1d 15.1c 15.1f 15.1f 15.1i 15.1i 15.1i 15.1i 15.1k 15.1l 15.1k 15.1l 15.2a	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes: EU legislation references:	Contact supplier.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1c 15.1c 15.1d 15.1c 15.1f 15.1i 15.1i 15.1j 15.1k 15.1l 15.1l 15.2a Section	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA New Jersey Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes: EU legislation references: Chemical safety assessment: Other regulatory information: 16: Other information	Contact supplier.
14.7b Section 15.1a 15.1a 15.1b 15.1c 15.1d 15.1c 15.1f 15.1f 15.1i 15.1i 15.1i 15.1k 15.1l 15.1k 15.1l 15.2a	Classification for other modes of transport: 15: Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture: Regional safety, health and environmental regulations specific for the product in question: USA SARA Components (such as 302/311/313): USA Massachusetts Right to Know: USA Pennsylvania Right to Know: USA California Prop. 65 Components: EU Regulation 1907/2006 {REACH}: Annex XIV substances subject to authorization: Substances of very high concern: Approved code of practice: Guidance notes: EU legislation references:	Contact supplier.

ThioBright[™] Green SDS; Doc# F17-6636-1-B; Effective: 10/11/2017; Supersedes: F17-6636-1-A; Page 6 of 6

16.1c	Supersedes SDS number and revision:	F17-6636-1-A
16.1d	Changes made to the previous version of the SDS:	Updated version/revision date; minor corrections.
16.1e	Key/legend to abbreviations and acronyms used in	ACGIH American Conference of Governmental Industrial Hygienists.
	the SDS:	ADN European Provisions concerning the International Carriage of
		Dangerous Goods by Inland Waterway.
		ADR The European Agreement concerning the International Carriage
		of Dangerous Goods by Road.
		ATE Acute Toxicity Estimate.
		BCF Bio Concentration Factor.
		CAS Chemical Abstracts Service.
		CLP Classification, Labelling and Packaging.
		CMR Carcinogen, Mutagen or Reproductive toxicant.
		COD Chemical Oxygen Demand.
		EC European Commission.
		EC50 Half maximal effective concentration.
		EH40 Resource containing the list of workplace exposure limits for use
		with the Control of Substances Hazardous to Health Regulations.
		EINECS European Inventory of Existing Commercial chemical
		Substances.
		ELINCS European List of Notified Chemical Substances.
		EU European Union.
		GHS Globally Harmonized System of Classification and Labelling of
		Chemicals.
		H Statement GHS Hazard statement.
		IATA International Air Transport Association.
		IBC Intermediate Bulk Container.
		IC50 Half maximal inhibitory concentration.
		IMDG International Maritime Dangerous Goods.
		LC50 Median lethal concentration.
		LD50 Median lethal dose.
		LogPow logarithm of the octanol/water partition coefficient.
		MARPOL 73/78 International Convention for the Prevention of
		Pollution From Ships, 1973 as modified by the Protocol of 1978.
		OEL Occupational Exposure Limit.
		OSHA Occupational Safety and Health Administration (USA).
		PBT Persistent, Bioaccumulative, and Toxic.
		PEL Permissible Exposure Limit.
		RID The Regulations concerning the International Carriage of
		Dangerous Goods by Rail.
		SADT Self-Accelerating Decomposition Temperature.
		SARA Superfund Amendments and Reauthorization Act.
		SCBA Self-Contained Breathing Apparatus.
		SDS Safety Data Sheet.
		STOT Specific Target Organ Toxicity.
		STOT-RE Specific Target Organ Toxicity - Repeated Exposure.
		STOT-SE Specific Target Organ Toxicity - Single Exposure.
		UN United Nations.
		USA United States of America.
		vPvB very Persistent very bioaccumulative.
16.1f	Full text of hazard statements and/or precautionary statements not written out in full elsewhere:	All statements were written out in full.
DISCLA		ific material designated and may not be valid for such material used
		or in any process. Such information is, to the best of the company's
		ble as of the date indicated. However, no warranty guarantee or
		eliability, or completeness. It is the user's responsibility to satisfy
	himself as to the suitability of such infor	
	E	END OF SDS

Assay Buffer; Doc# F17-6637-1-B; Effective: 10/11/2017; Supersedes: F17-6637-1-A; Page 1 of 6



SAFETY DATA SHEET (SDS) according to Regulation (EC) No. 830/2015 amending 1907/2006

	n 1: Identification of the substance/mixture and of th	
1.1	Product identifier:	Assay Buffer
1.1a	Other means of identification:	
1.1b	Alternative product name(s)/ synonyms:	Hanks Balanced Salt Solution containing Hepes
1.1c	Product number/Catalog #(s):	6637
1.1d	Internal identification:	Assay Buffer, 100 mL
1.2	Relevant identified uses of the substance or mixture and uses advised against:	For research use only. Not for use in diagnostic procedures.
1.2a	Brief description of what the substance or mixture is	A buffered diluent for use in Intracellular GSH Assay Kit #9137
	intended to do:	
1.3	Details of the supplier of the SDS:	
1.3a	Name:	ImmunoChemistry Technologies, LLC (ICT)
1.3b	Address:	9401 James Avenue South, Suite 155
1.3c	City, State, Zip, Country	Bloomington, MN 55431-2500 USA
1.3d	Phone number:	1-800-829-3194 and 952-888-8788
1.3e 1.3f	Fax number: Website:	952-888-8988 www.immunochemistry.com
1.3g	Email:	help@immunochemistry.com
1.3h	Contact person at ICT:	Quality Documentation Department
1.4	Emergency telephone number:	ICT: 1-800-829-3194 (USA & Canada) or 952-888-8788 world wide;
		ICT hours are 9 am-5 pm central time USA, Monday through Friday (excluding holidays). Chemtrec 24-hour access within USA and Canada: 1-800-424-9300 or +1 703-527-3887. Collect calls accepted.
	n 2: Hazards identification	
2.1	Classification of the substance or mixture:	
2.1a	Product is a:	Mixture.
2.1b	Classification according to (EC) No. 1272/2008 {CLP}:	Does not meet the criteria for classification.
2.1c	The most important adverse physiochemical, human health, and environmental effects:	Refer to Sections 9-12.
2.2	Label elements:	None.
2.2a	GHS label elements, including precautionary statements:	None.
2.2b	Contains:	None.
2.2c	Labeling in accordance with (EC) No. 1272/2008:	None.
2.2d	Hazard Pictograms (Hazard Symbols):	None.
2.2e	Signal word:	None.
2.2f	Hazard statements:	None.
2.2g	Precautionary statements:	None.
2.2h	Supplementary precaution statements:	None.
2.3	Other hazards:	No additional information available.
2.3a 2.3b	Does the chemical meet the criteria for PBT or vPvB? Other hazards which do not result in classification:	Not applicable. No information available.
2.30	Other hazards which do not result in classification.	
Sectio	n 3: Composition/information on ingredients	
3.1	Substance:	Item is a mixture therefore Section 3.1 is not applicable; see Section
		3.2.
2.0	Missinga	Item is a mixture
3.2	Mixture: The chemical identity and concentration or concentration ranges of all ingredients which are	Item is a mixture.
	hazardous and are present above their cut-off levels:	
	3.2a Chemical identity:	No ingredients identified for reporting in this section.
•		
Sectio 4.1	n 4: First aid measures	If concorred, get modical attention/advice and provide physician with
4.1	Description of first aid measures:	If concerned, get medical attention/advice and provide physician with SDS information. Wash contaminated clothing before reuse. Never give anything by mouth to an unconscious person.
4.1a	Inhalation:	Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Rinse nose and mouth with water. Get medical attention if any discomfort continues.

Assay Buffer; Doc# F17-6637-1-B; Effective: 10/11/2017; Supersedes: F17-6637-1-A; Page 2 of 6

4.1b	Assay Buffer; Doc# F17-6637-1-B; Effective	
4.10	Skin contact:	Wash skin thoroughly with soap and water for several minutes; continue to rinse for at least 15 minutes. Remove any contaminated clothing and shoes and wash thoroughly before reuse. Get medical
4.1c	Eye contact:	attention if any discomfort continues. Promptly wash eyes with plenty of water while lifting the eyelids. Make
4.10	Lye contact.	sure to remove any contact lenses from the eyes before rinsing. Continue to rinse for at least 15 minutes. Get medical attention if any
		discomfort continues.
4.1d	Ingestion:	NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK
		FLUIDS! Rinse mouth thoroughly. Do not induce vomiting without
		advice from poison control center or medical professional. Get medical attention if any discomfort continues.
4.2	Most important symptoms and effects, both acute and delayed:	
4.2a	Inhalation:	May cause coughing or mild irritation.
4.2b	Skin contact:	Prolonged skin contact may cause redness and mild irritation.
4.2c	Eye contact:	May cause temporary eye irritation.
4.2d 4.3	Ingestion: Indication of any immediate medical attention and	May cause discomfort if swallowed. No specific first aid measures noted, but first aid may still be required
1 .J	special treatment needed:	in case of accidental exposure, inhalation, or ingestion of this product.
		If in doubt, get medical attention promptly!
4.3a	Notes to physician/first responder:	Treat symptomatically. Refer to Sections 5-8 for advice on personal
		protective equipment.
	on 5: Firefighting measures	
5.1	Extinguishing media:	This product is not flammable. Use fire-extinguishing media
5.1a	Suitable extinguishing media:	appropriate for the surrounding materials. Water spray, foam, dry powder, or carbon dioxide.
5.1b	Unsuitable extinguishing media:	None known.
5.2	Special hazards arising from the substance or mixture:	This product is not flammable. Product is not explosive. No dangerous reactions known under normal conditions of use.
5.2a	Hazardous combustion products:	None under normal conditions.
5.2b 5.2c	Unusual fire & explosion hazards:	No unusual fire or explosion hazards noted.
5.20 5.3	Protective measures in fire: Advice for firefighters:	Use protective equipment appropriate for surrounding materials. Keep away from heat, hot surfaces, sparks, open flames and other
0.0	Advice for menginers.	ignition sources. No smoking.
5.3a	Special firefighting procedures:	No specific firefighting procedure given.
5.3b	Special protective equipment and precautions for	Wear full protective clothing, including self-contained breathing
	firefighters:	apparatus, if necessary. The product presents no special fire hazards
		in normal use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
		hames and other ignition sources. No smoking.
Sectic 6.1	on 6: Accidental release measures	
	Personal precautions, protective equipment, and	Use protective equipment appropriate for surrounding materials.
0.1		
-	emergency procedures: General release measures:	No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eve or face protection. Consult
-	emergency procedures:	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes,
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition.
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures:	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned.
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned.
6.1a	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures:	laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned.
6.1a 6.1b 6.1c 6.2	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions:	 laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned. Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Do not allow to enter drains, sewers, or watercourses.
6.1a 6.1b 6.1c 6.2	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions: Methods and materials for containment and	 laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned. Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Do not allow to enter drains, sewers, or watercourses. Contain any spills with dikes or absorbent materials to prevent
6.1a 6.1b 6.1c 6.2	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions:	 laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned. Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Do not allow to enter drains, sewers, or watercourses. Contain any spills with dikes or absorbent materials to prevent migration and entry into sewers or water sources. Place in a suitable
6.1a 6.1b 6.1c 6.2	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions: Methods and materials for containment and	 laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned. Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Do not allow to enter drains, sewers, or watercourses. Contain any spills with dikes or absorbent materials to prevent migration and entry into sewers or water sources. Place in a suitable container for disposal in accordance with local waste regulations (see
6.1a 6.1b 6.1c 6.2	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions: Methods and materials for containment and	 laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned. Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Do not allow to enter drains, sewers, or watercourses. Contain any spills with dikes or absorbent materials to prevent migration and entry into sewers or water sources. Place in a suitable container for disposal in accordance with local waste regulations (see Section 13). Wash spill area thoroughly with plenty of soap and water.
6.1a 6.1b 6.1c 6.2 6.3 6.4	emergency procedures: General release measures: Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Advice for emergency responders; personal precautions, protective equipment and emergency procedures: Environmental precautions: Methods and materials for containment and	 laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8). No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned. Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Do not allow to enter drains, sewers, or watercourses. Contain any spills with dikes or absorbent materials to prevent migration and entry into sewers or water sources. Place in a suitable container for disposal in accordance with local waste regulations (see

Sectio	on 7: Handling and storage	
7.1	Precautions for safe handling:	Do not handle until all safety precautions have been read and understood. Avoid creation of aerosol/mist/dust. Avoid inhalation of vapors/mist/dust. Prevent contact with skin and eyes. Use appropriate personal protection equipment (PPE). Thoroughly wash hands and contaminated areas with water and soap before leaving the work site.
7.1a	Prevent handling of incompatible substances or mixtures:	 Keep away from sources of ignition. Avoid contact with halogenated hydrocarbons, strong acids, strong oxidizers, and metals.
7.1b	Advice on general occupational hygiene:	Do not eat, drink, or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Good personal hygiene is necessary. Follow good laboratory hygiene and safety practices.
7.2	Conditions for safe storage, including any incompatibilities:	Refer to product label. Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid spills and release into the environment; keep away from watercourses.
7.3	Specific end use(s):	For research use only. Not for use in diagnostic procedures.
Sectio	on 8: Exposure controls/personal protection	
8.1	Control parameters:	
8.1a	Occupational exposure limits, such as chemical identity, standard, TWA-8 hours (time weighted average), STEL-15 minutes (short term exposure limit), etc.: WEL = Workplace Exposure Limit. Sk = can be absorbed through skin.	Not available.
8.1b	Appropriate engineering controls:	
8.1c 8.1d	Individual protection measures, such as personal protective equipment:	Wear gloves. Wear protective goggles.
o. 1u	Safety symbols:	
8.2	Exposure controls:	
8.2a	Process conditions:	Provide eyewash station.
8.2b	Engineering controls:	Ensure that eyewash stations and safety showers are proximal to the
8.2c	Ventilation controls:	workstation location.
8.2c 8.2d	Ventilation controls:	Provide adequate ventilation.
8.2c 8.2d 8.2e	Ventilation controls: Reference to other sections: Eye/face protection:	
8.2d 8.2e 8.2f	Reference to other sections: Eye/face protection: Skin protection:	Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact.
8.2d 8.2e 8.2f 8.2g	Reference to other sections: Eye/face protection: Skin protection: Hand protection:	Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact.
8.2d 8.2e 8.2f 8.2g 8.2h	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment:	Provide adequate ventilation.Refer to Section 5 for additional information.Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.Wear apron or protective clothing in case of contact.Use suitable protective gloves if risk of skin contact.Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
8.2d 8.2e 8.2f 8.2g 8.2h 8.2h	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection:	Provide adequate ventilation.Refer to Section 5 for additional information.Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.Wear apron or protective clothing in case of contact.Use suitable protective gloves if risk of skin contact.Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).Wear appropriate clothing to avoid skin contact.
8.2d 8.2e 8.2f 8.2g 8.2h 8.2h	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures:	Provide adequate ventilation.Refer to Section 5 for additional information.Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.Wear apron or protective clothing in case of contact.Use suitable protective gloves if risk of skin contact.Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).Wear appropriate clothing to avoid skin contact.DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated.
8.2d 8.2e 8.2g 8.2h 8.2h 8.2h 8.2i 8.2j 8.2j	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards:	 Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Wear appropriate clothing to avoid skin contact. DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated.
8.2d 8.2e 8.2g 8.2g 8.2h 8.2h 8.2i 8.2j 8.2j 8.2z	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards: Environmental exposure controls:	Provide adequate ventilation.Refer to Section 5 for additional information.Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.Wear apron or protective clothing in case of contact.Use suitable protective gloves if risk of skin contact.Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).Wear appropriate clothing to avoid skin contact.DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated.
8.2d 8.2e 8.2g 8.2g 8.2h 8.2h 8.2i 8.2j 8.2j 8.2z	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards:	 Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Wear appropriate clothing to avoid skin contact. DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated.
8.2d 8.2e 8.2g 8.2h 8.2h 8.2h 8.2i 8.2j 8.2j 8.2j 8.2l Sectio 9.1a	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards: Environmental exposure controls: on 9: Physical and chemical properties Information on basic physical and chemical properties: Appearance (physical state, color, etc.):	Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Wear appropriate clothing to avoid skin contact. DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated. None known under normal conditions of use. Not determined.
8.2d 8.2e 8.2g 8.2h 8.2h 8.2h 8.2i 8.2j 8.2j 8.2j 8.2l 9.1a 9.1a 9.1b	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards: Environmental exposure controls: on 9: Physical and chemical properties Information on basic physical and chemical properties: Appearance (physical state, color, etc.): Odor:	Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Wear appropriate clothing to avoid skin contact. DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated. None known under normal conditions of use. Not determined. . Liquid; colorless. No characteristic odor.
8.2d 8.2e 8.2g 8.2h 8.2h 8.2h 8.2i 8.2j 8.2j 8.2j 8.2j 9.1a 9.1a 9.1c	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards: Environmental exposure controls: 9: Physical and chemical properties Information on basic physical and chemical properties: Appearance (physical state, color, etc.): Odor: Odor threshold:	Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Wear appropriate clothing to avoid skin contact. DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated. None known under normal conditions of use. Not determined. . Liquid; colorless. No characteristic odor. No data available.
8.2d 8.2e 8.2g 8.2h 8.2h 8.2h 8.2i 8.2j 8.2j 8.2j 8.2l 9.1a 9.1a 9.1b	Reference to other sections: Eye/face protection: Skin protection: Hand protection: Respiratory equipment: Other protection: Hygiene measures: Thermal hazards: Environmental exposure controls: on 9: Physical and chemical properties Information on basic physical and chemical properties: Appearance (physical state, color, etc.): Odor:	Provide adequate ventilation. Refer to Section 5 for additional information. Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing. Wear apron or protective clothing in case of contact. Use suitable protective gloves if risk of skin contact. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Wear appropriate clothing to avoid skin contact. DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated. None known under normal conditions of use. Not determined. . Liquid; colorless. No characteristic odor.

Assay Buffer; Doc# F17-6637-1-B; Effective: 10/11/2017; Supersedes: F17-6637-1-A; Page 4 of 6

9.1h	Evaporation rate:	No data available.
9.1i	Flammability (solid, gas):	No data available.
9.1j	Upper/lower flammability or explosive limits:	No data available.
9.1k	Vapor pressure:	No data available.
9.11	Vapor density (Air =1):	No data available.
9.1m	Relative density:	No data available.
9.1n	Solubility(ies):	No data available.
9.10	Partition coefficient (N-octanol/water):	No data available.
9.1p	Auto-ignition temperature (°C):	No data available.
9.1q	Decomposition temperature (°C):	No data available.
9.1r	Viscosity:	No data available.
9.1s	Explosive properties:	No data available.
9.1t	Oxidizing properties:	No data available.
9.2	Other information:	None.
9.2a	Other physical or chemical parameters:	None.
Section	n 10: Stability and reactivity	
10.1	Reactivity:	No data available.
10.2	Chemical stability:	Stable under normal recommended storage conditions.
10.3	Possibility of hazardous reactions:	Hazardous polymerization: no data available.
10.4	Conditions to avoid:	To avoid product degradation, avoid exposure to high temperatures or
		direct sunlight or light.
10.5	Incompatible materials:	No data available.
10.6	Hazardous decomposition products:	None under normal conditions.
Section	n 11: Toxicological information	
11.1	Information on toxicological effects:	
11.1a	Name:	Assay Buffer
11.1b	Acute toxicity:	Not determined.
11.1c	Skin corrosion/irritation:	Not determined.
11.1d	Serious eye damage/irritation:	Not determined.
11.1e	Respiratory or skin sensitization:	Not determined.
11.1f	Germ cell mutagenicity:	Not determined.
11.1g	Carcinogenicity:	Not determined.
11.1h	Reproductive toxicity:	Not determined.
11.1i	STOT-single exposure:	Not determined.
11.1j	STOT-repeated exposure:	Not determined.
11.1k	Aspiration hazard:	Not determined.
11.11	Information on the likely routes of exposure	May enter by skin and/or eye contact; inhalation of vapors/mist/dust.
11.11	(inhalation, ingestion, skin and eye contact):	May enter by skin and/or eye contact, initialation of vapors/mis/dust.
11.1m	Ingestion:	May cause discomfort if swallowed.
		In high concentrations, vapors may irritate throat and respiratory
11.1n	Inhalation:	
11.10	Skin contact	system and cause coughing. Liquid may irritate skin and cause redness.
11.10	Skin contact:	
11.1p	Eye contact:	Spray and vapor in the eyes may cause irritation and smarting.
11.1q	Symptoms related to the physical, chemical and	No specific symptoms noted.
44.4	toxicological characteristics:	
11.1r	Delayed and immediate effects as well as chronic	Not determined.
44.4	effects from short and long term exposure:	
11.1s	Numerical measures of toxicity (such as acute	Not determined.
44.41	toxicity estimates):	Net determined
11.1t	Interactive effects:	Not determined.
<u>11.1u</u>	Absence of specific data:	Not applicable.
<u>11.1v</u>	Mixtures:	Item is a mixture.
11.1w	Mixture vs. substance information:	See Section 3 for any substances in the mixture.
11.1x	Classification by National Toxicity Program (NTP):	Not classified.
11.1y	Classification by International Agency for Research	Not classified.
	on Cancer (IARC):	
11.1z	Classification by OSHA 13:	Not classified.
11.1ab	Other information:	None.
Section	n 12: Ecological information	
12.1	Toxicity:	
12.1a	Name:	Assay Buffer.
12.1b	Ecotoxicity (aquatic and terrestrial, where available):	No data available.
	Persistence and degradability:	There are no data on the degradability of this product.
12.2		
12.2 12.3		
12.2 12.3 12.4	Bioaccumulative potential: Mobility in soil:	No data available on bioaccumulation. Mobility in soil is unknown (the product is soluble in water).

Assay Buffer; Doc# F17-6637-1-B; Effective: 10/11/2017; Supersedes: F17-6637-1-A; Page 5 of 6

12.6	Other adverse effects:	No data available.
Section	13: Disposal considerations	
Section 13.1	1 13: Disposal considerations Waste treatment methods:	When handling waste, consideration should be made to the safety
13.1	waste treatment methods:	precautions applying to handling of the product.
3.1a	Description of waste residues and information on	Dispose of waste and residues in accordance with local authority
5.Ta	their safe handling and methods of disposal,	requirements. For the safety of persons conducting disposal, recycling
	including the disposal of any contaminated	or reclamation activities, please refer to the information in Section 8
	packaging:	(exposure controls and personal protection) of the SDS.
Section	14: Transport information	
4.1	UN number:	Not applicable.
4.2	UN proper shipping name:	Not applicable.
14.3	Transport hazard class(es):	Not applicable.
14.4	Packing group:	Not applicable.
4.5	Environmental hazards:	
4.5a	Is it environmentally dangerous according to UN	No.
	Model Regulations (IMDG Code, ADR, RID, and	
	ADN)?:	
14.5b		No.
14.50	Is it a marine pollutant according to the IMDG code?:	
4.6	Special precautions for user:	None known.
14.7	Transport in bulk according to Annex II of	Not applicable.
	MARPOL and the IBC code:	
14.7a	Other information:	The product is not considered a dangerous good for transport.
14.7b	Classification for other modes of transport:	Contact supplier.
11.70		
Section	15: Regulatory information	
15.1	Safety, health and environmental	
	regulations/legislation specific for the substance	•
	or mixture:	
15.1a	Regional safety, health and environmental	Not classified.
15.14	regulations specific for the product in question:	
45 46		Net listed
15.1b	USA SARA Components (such as 302/311/313):	Not listed.
15.1c	USA Massachusetts Right to Know:	Not listed.
15.1d	USA Pennsylvania Right to Know:	Not listed.
15.1e	USA New Jersey Right to Know:	Not listed.
15.1f	USA California Prop. 65 Components:	Not listed.
15.1g	EU Regulation 1907/2006 {REACH}:	
15.1h	Annex XIV substances subject to authorization:	Not listed.
15.1i	Substances of very high concern:	Not listed.
15.1j	Approved code of practice:	Classification and labeling of substances and preparations dangerous
,		for supply. Safety data sheets for substances and preparations.
15.1k	Guidance notes:	Workplace exposure limits EH40.
15.11	EU legislation references:	(EC) No. 1272/2008 on the classification, labelling and packaging of
		substances and mixtures (CLP Regulation). EC 830/2015. Regulation
		(EC) No 1907/2006 of the European Parliament and of the Council of
		18 December 2006 concerning the Registration, Evaluation,
		Authorisation and Restriction of Chemicals (REACH), establishing a
		European Chemicals Agency, amending Directive 1999/45/EC and
		repealing Council Regulation (EEC) No 793/93 and Commission
		Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC
		and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and
		2000/21/EC, including amendments.
5.2	Chemical safety assessment:	Not required.
15.2a	Other regulatory information:	None.
	16: Other information	
6.1	Other information:	
16.1a	Date of revision:	10/11/2017
16.1b	SDS number and revision:	F17-6637-1-B
16.1c	Supersedes SDS number and revision:	F17-6637-1-A
16.1d	Changes made to the previous version of the SDS:	Updated version/revision date; minor corrections.
16.1e	Key/legend to abbreviations and acronyms used in	ACGIH American Conference of Governmental Industrial Hygienists.
	regnogona to approviations and acronying used in	

. iu	Changes made to the previous version of the SDS.	opulated version/revision date, minor corrections.
.1e	Key/legend to abbreviations and acronyms used in	ACGIH American Conference of Governmental Industrial Hygienists.
	the SDS:	ADN European Provisions concerning the International Carriage of
		Dangerous Goods by Inland Waterway.
		ADR The European Agreement concerning the International Carriage
		of Dangerous Goods by Road.
		ATE Acute Toxicity Estimate.
		BCF Bio Concentration Factor.
		CAS Chemical Abstracts Service.

Assay Buffer; Doc# F17-6637-1-B; Effective: 10/11/2017; Supersedes: F17-6637-1-A; Page 6 of 6

	1	ASSAY BUILET, DUC# F17-0037-1-D, Ellective	
			CLP Classification, Labelling and Packaging.
			CMR Carcinogen, Mutagen or Reproductive toxicant.
			COD Chemical Oxygen Demand.
			EC European Commission.
			EC50 Half maximal effective concentration.
			EH40 Resource containing the list of workplace exposure limits for use
			with the Control of Substances Hazardous to Health Regulations.
			EINECS European Inventory of Existing Commercial chemical
			Substances.
			ELINCS European List of Notified Chemical Substances.
			•
			EU European Union.
			GHS Globally Harmonized System of Classification and Labelling of
			Chemicals.
			H Statement GHS Hazard statement.
			IATA International Air Transport Association.
			IBC Intermediate Bulk Container.
			IC50 Half maximal inhibitory concentration.
			IMDG International Maritime Dangerous Goods.
			LC50 Median lethal concentration.
			LD50 Median lethal dose.
			LogPow logarithm of the octanol/water partition coefficient.
			MARPOL 73/78 International Convention for the Prevention of
			Pollution From Ships, 1973 as modified by the Protocol of 1978.
			OEL Occupational Exposure Limit.
			OSHA Occupational Safety and Health Administration (USA).
			PBT Persistent, Bioaccumulative, and Toxic.
			PEL Permissible Exposure Limit.
			RID The Regulations concerning the International Carriage of
			Dangerous Goods by Rail.
			SADT Self-Accelerating Decomposition Temperature.
			SARA Superfund Amendments and Reauthorization Act.
			SCBA Self-Contained Breathing Apparatus.
			SDS Safety Data Sheet.
			STOT Specific Target Organ Toxicity.
			STOT-RE Specific Target Organ Toxicity - Repeated Exposure.
			STOT-SE Specific Target Organ Toxicity - Single Exposure.
			UN United Nations.
			USA United States of America.
			vPvB very Persistent very bioaccumulative.
16.1f	Full text	t of hazard statements and/or precautionary	All statements were written out in full.
10.11		ents not written out in full elsewhere:	
	AIMER:		ic material designated and may not be valid for such material used
DISCL			r in any process. Such information is, to the best of the company's
			le as of the date indicated. However, no warranty guarantee or
			liability, or completeness. It is the user's responsibility to satisfy
		himself as to the suitability of such inform	nation for his own particular use.
END OF SDS			

DMSO SDS; Doc# F17-6638-1-B; Effective: 10/11/2017; Supersedes: F17-6638-1-A; Page 1 of 7



SAFETY DATA SHEET (SDS) according to Regulation (EC) No. 830/2015 amending 1907/2006

Section 1: Identification of the substance/mixture and of th 1.1 Product identifier:		DMSO
		DMSO
1.1a	Other means of identification:	
1.1b	Alternative product name(s)/ synonyms:	Dimethyl Sulfoxide
1.1c	Product number/Catalog #(s):	6638
1.1d	Internal identification:	DMSO, 500 µL
1.2	Relevant identified uses of the substance or mixture and uses advised against:	For research use only. Not for use in diagnostic procedures.
1.2a	Brief description of what the substance or mixture is intended to do:	For reconstitution of ThioBright™ Green Reagent (Catalog #6636)
1.3	Details of the supplier of the SDS:	
1.3a 1.3b	Address:	ImmunoChemistry Technologies, LLC (ICT) 9401 James Avenue South, Suite 155
1.3c	City, State, Zip, Country	Bloomington, MN 55431-2500 USA
1.3d	Phone number:	1-800-829-3194 and 952-888-8788
1.3e	Fax number:	952-888-8988
1.3f	Website:	www.immunochemistry.com
1.3g	Email:	help@immunochemistry.com
1.3h	Contact person at ICT:	Quality Documentation Department
1.4	Emergency telephone number:	ICT: 1-800-829-3194 (USA & Canada) or 952-888-8788 world wide; ICT hours are 9 am-5 pm central time USA, Monday through Friday (excluding holidays). Chemtrec 24-hour access within USA and Canada: 1-800-424-9300 or +1 703-527-3887. Collect calls accepted.
	on 2: Hazards identification	1
2.1	Classification of the substance or mixture:	
2.1a	Product is a:	Substance.
2.1b	Classification according to (EC) No. 1272/2008 {CLP}:	Flammable Liquids (Category 4) H227 (USA only) Skin Irritation (Category 2) H315 Eye Irritation (Category 2) H319
2.1c 2.2	The most important adverse physiochemical, human health, and environmental effects:	Refer to Sections 9-12.
2.2a	GHS label elements, including precautionary statements:	•
2.2b	Contains:	Dimethyl Sulfoxide.
2.2c	Labeling in accordance with (EC) No. 1272/2008:	
2.2d	Hazard Pictograms (Hazard Symbols):	GHS07 Exclamation mark.
2.2e	Signal word:	Warning.
2.2f	Hazard statements:	H227 Combustible liquid (USA only). H315 Causes skin irritation.
0.01		H319 Causes serious eye irritation.
2.2g	Precautionary statements:	 P210 Keep away from heat/hot surfaces/sparks/open flames/other ignition sources. No smoking. P264 Wash hands/skin thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P305+P351+P338 IF IN EYES: Rinse cautiously with water for severa minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P313 Get medical advice/attention. P321a Specific treatment: see first aid advice on this label. P370+P378 In case of fire: use dry sand, dry chemical or alcohol-resistant foam to extinguish. P403+P235 Store in a well-ventilated place. Keep cool. P501 Dispose of contents/container to an approved waste disposal
		plant.

DMSO SDS; Doc# F17-6638-1-B; Effective: 10/11/2017; Supersedes: F17-6638-1-A; Page 2 of 7

	DMSO SDS;	Doc# F17-6638-1-B; Effective		des: F17-6638-1-A; Page 2 of 7
			P337+P313 If eye irritation persists: get medical advice/attention. P362 Take off contaminated clothing and wash it before reuse.	
2.3	Other hazards:		•	
2.3a	Does the chemical meet the		Not applicable.	
2.3b	Other hazards which do not result in classification:		No information ava	ailable.
	n 3: Composition/informat	ion on ingredients		
3.1	Substance:		Item is a substance	
	3.1a Chemical identity:		Dimethyl Sulfoxide	•
			C ₂ H ₆ OS	
	0.41-0		MW: 78.13 g/mol	
	3.1b Common name, synor	lyms, etc.:	DMSO, Mothyl gylfoyido	
	3.1c CAS number and		Methyl sulfoxide <u>3.1e %</u>	3.1f Classification according to (EC) No.
	other unique identifiers:	3.1d EC number:	Concentration:	1272/2008 {CLP}:
	67-68-5	200-664-3	<u>≤ 100%</u>	H227 Combustible liquid (USA only). Flamm Liq.
	07 00 0	200 004 0	= 100 /0	4.
				H315 Causes skin irritation. Skin Irrit. 2.
				H319 Causes serious eye irritation. Eye Irrit. 2.
0.4		<u> </u>		
3.1g	Chemical identity of any im		Not applicable.	
	or individual constituent oth constituent, which is itself or			
	contributes to the classifica			
	identifier, trade name, ident			
3.1h	Other information on the su		Not applicable.	
0.111			not applicable.	
Sectio	n 4: First aid measures			
4.1	Description of first aid me	easures:	If concerned, aet n	nedical attention/advice and provide physician with
				Vash contaminated clothing before reuse. Never
				nouth to an unconscious person.
4.1a	Inhalation:			ackaging the risk of inhalation is minimal. Remove to
				at rest in a comfortable position for breathing. If not
				ficial respiration. Rinse nose and mouth with water.
				ion if any discomfort continues.
4.1b	Skin contact:			hly with soap and water for several minutes;
				or at least 15 minutes. Remove any contaminated
				and wash thoroughly before reuse. Get medical
4.1c	Eve contect:		attention if any dis	es with plenty of water while lifting the eyelids. Make
4.10	Eye contact:			y contact lenses from the eyes before rinsing.
				or at least 15 minutes. Get medical attention if any
			discomfort continu	,
4.1d	Ingestion:			UNCONSCIOUS PERSON VOMIT OR DRINK
	5		FLUIDS! Rinse mo	outh thoroughly. Do not induce vomiting without
				n control center or medical professional. Get medical
			attention if any dis	comfort continues.
4.2	Most important symptom and delayed:	s and effects, both acute	•	
4.2a	Inhalation:		None known.	
4.2b	Skin contact:		Causes skin irritation.	
4.2c	Eye contact:		Causes serious ey	e irritation.
4.2d	Ingestion:		None known.	
4.3	Indication of any immedia			measures noted, but first aid may still be required
	special treatment needed	:		al exposure, inhalation, or ingestion of this product.
4.3a	Notes to physician/first resp	andar	Troot overstored	dical attention promptly! ally. Refer to Sections 5-8 for advice on personal
4.5a	Notes to physician/mist resp	Jonder.	protective equipme	
	· · · · · · · · · · · · · · · · · · ·		protective oquiprit	
	n 5: Firefighting measures			
5.1	Extinguishing media:	dia	Use fire-extinguish	ing media appropriate for the surrounding materials.
5.1a	Suitable extinguishing me		Water spray, toam None known.	, dry powder, or carbon dioxide.
5.1b 5.2	Unsuitable extinguishing r Special hazards arising			osive. No dangerous reactions known under normal
5.2	mixture:	nom the substance of	conditions of use.	usive. No dangerous reactions known under normal
5.2a	Hazardous combustion pr	oducts:		c gases may be formed of carbon monoxide (CO),
0.20				D_2 ; CO _x). None under normal conditions.
5.2b	Unusual fire & explosion h	azards:	No unusual fire or	explosion hazards noted.
5.2b 5.2c	Unusual fire & explosion h Protective measures in fire			explosion hazards noted. iipment appropriate for surrounding materials.

DMSO SDS; Doc# F17-6638-1-B; Effective: 10/11/2017; Supersedes: F17-6638-1-A; Page 3 of 7

	<u>DMSO SDS; D0c# F17-6638-1-B; Effective</u>	e: 10/11/2017; Supersedes: F17-6638-1-A; Page 3 of 7 ignition sources. No smoking.
5.3a	Special firefighting procedures:	No specific firefighting procedure given.
5.3b	Special protective equipment and precautions for firefighters:	Wear full protective clothing, including self-contained breathing apparatus, if necessary. The product is combustible.
Sectio 6.1	n 6: Accidental release measures Personal precautions, protective equipment, and	
0.1	emergency procedures:	
6.1a	General release measures:	Use protective equipment appropriate for surrounding materials. No specific emergency measures are required other than good laboratory hygiene and safety practices for small spills. Wear suitable protective clothing, gloves and eye or face protection. Consult professional emergency personnel if concerned (see Section 8).
6.1b	Advice for non-emergency personnel; personal precautions, protective equipment and emergency procedures:	No specific emergency measures are required other than good laboratory hygiene and safety practices. Wear suitable protective clothing/gloves/eye/face protection to avoid contact with skin, eyes, and personal clothing; use an approved supplied-air respirator, in case of emergency (also refer to Section 8). Remove all sources of ignition. Ensure adequate ventilation and control dust/mist. Avoid breathing vapors, mist, or gas. Evacuate personnel to safe areas. Wear suitable protective clothing, gloves and eye or face protection to prevent any contamination. Consult professional emergency personnel if concerned.
6.1c	Advice for emergency responders; personal precautions, protective equipment and emergency	Wear suitable protective clothing, gloves and eye or face protection to avoid contact; use an approved supplied-air respirator, in case of
6.2	procedures: Environmental precautions:	emergency (also refer to Section 8). Do not allow to enter drains, sewers, or watercourses.
6.3	Methods and materials for containment and	Contain any spills with dikes or absorbent materials to prevent
	clean up:	migration and entry into sewers or water sources. Place in a suitable container for disposal in accordance with local waste regulations (see Section 13). Wash spill area thoroughly with plenty of soap and water. Avoid contact with skin or inhalation of spillage, dust, or vapor.
6.4	Reference to other sections:	Refer to Sections 8 and 13 for additional information.
•	n 7: Handling and storage	
7.1	Precautions for safe handling:	Do not handle until all safety precautions have been read and understood. Avoid creation of aerosol/mist/dust. Avoid inhalation of vapors/mist/dust. Prevent contact with skin and eyes. Use appropriate personal protection equipment (PPE). Thoroughly wash hands and contaminated areas with water and soap before leaving the work site. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources.
7.1a	Prevent handling of incompatible substances or mixtures:	Avoid contact with strong acids, strong oxidizing substances, strong reducing agents, acid chlorides and phosphorus halides.
7.1b	Advice on general occupational hygiene:	Do not eat, drink, or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Good personal hygiene is necessary. Follow good laboratory hygiene and safety practices.
7.2	Conditions for safe storage, including any incompatibilities:	Refer to product label. Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid spills and release into the environment; keep away from watercourses.
7.3	Specific end use(s):	For research use only. Not for use in diagnostic procedures.
Sactio	n 9: Exposure controls/personal protection	
<u>Sectio</u> 8.1	n 8: Exposure controls/personal protection Control parameters:	l.
8.1a	Occupational exposure limits, such as chemical identity, standard, TWA-8 hours (time weighted average), STEL-15 minutes (short term exposure limit), etc.: WEL = Workplace Exposure Limit. Sk = can be absorbed through skin.	Dimethyl Sulfoxide: US WEEL Workplace Environmental Exposure Levels TWA: 250 PPM 8-hours
8.1b 8.1c	Appropriate engineering controls: Individual protection measures, such as personal protective equipment:	Wear gloves, protective goggles, and lab coat.
8.1d	Safety symbols: Exposure controls:	
U.2		

DMSO SDS; Doc# F17-6638-1-B; Effective: 10/11/2017; Supersedes: F17-6638-1-A; Page 4 of 7

1		
8.2a	Process conditions:	Provide eyewash station.
8.2b	Engineering controls:	Ensure that eyewash stations and safety showers are proximal to the workstation location.
8.2c	Ventilation controls:	Provide adequate ventilation.
8.2d	Reference to other sections:	Refer to Section 5 for additional information.
8.2e	Eye/face protection:	Wear approved chemical safety goggles where eye exposure is reasonably probable or face shield if risk of splashing.
8.2f	Skin protection:	Wear apron or protective clothing in case of contact.
8.2g	Hand protection:	Use suitable protective gloves if risk of skin contact.
8.2h	Respiratory equipment:	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
8.2i	Other protection:	Wear appropriate clothing to avoid skin contact.
8.2j	Hygiene measures:	DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking, and using the toilet. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink, or smoke. Wash promptly with soap and water if skin becomes contaminated
8.2k	Thermal hazards:	None known under normal conditions of use.
8.2l	Environmental exposure controls:	Not determined.
Section 9.1	n 9: Physical and chemical properties Information on basic physical and chemical	
-	properties:	
9.1a	Appearance (physical state, color, etc.):	Liquid; colorless.
9.1b	Odor:	Characteristic.
9.1c	Odor threshold:	Not determined.
9.1d	pH:	No data available.
9.1e	Melting point/freezing point (°C):	18.5°C (65.3°F)
9.1f	Initial boiling point and boiling range:	189°C (372°F) @ 1013 hPa
9.1g	Flash point (°C):	87°C (189°F) - closed cup - ASTM D 93 (pure DMSO).
9.1h	Evaporation rate:	Not determined.
9.1i	Flammability (solid, gas):	Not applicable.
9.1j	Upper/lower flammability or explosive limits:	Upper explosion limit: 42% (V) Lower explosion limit: 3.5% (V)
9.1k	Vapor pressure:	0.55 hPa (0.41 mmHg) at 20°C (68°F) 4 hPa (3 mmHg) at 50°C (122°F)
9.11	Vapor density (Air =1):	2.7 (Air =1)
9.1m	Relative density:	1.1g/cm ³ at 20°C
9.1n	Solubility(ies):	Soluble in water.
9.10	Partition coefficient (N-octanol/water):	log Pow: -1.349.
9.1p	Auto-ignition temperature (°C):	300 - 302°C (572 - 576°F).
9.1q	Decomposition temperature (°C):	> 190°C (> 374°F).
9.1r	Viscosity:	2.14 mPa.s at 20°C
9.1s	Explosive properties:	Not explosive.
9.1t	Oxidizing properties:	Not determined.
9.2	Other information:	None.
9.2a	Other physical or chemical parameters:	MW: 78.13 g/mol
	n 10: Stability and reactivity	
10.1	Reactivity:	Stable under normal conditions and use. Forms explosive mixtures with air on intense heating.

		with air on intense heating.
10.2	Chemical stability:	Hygroscopic. Stable under recommended storage conditions.
10.3	Possibility of hazardous reactions:	 Hazardous polymerization does not occur. Risk of explosion with: acetylidene, organic halides, perchlorates, acid chlorides, nonmetalic halides, iron (III) compounds, nitrates, fluorides, chlorates, hydrides, perchloric acid, Oxides of phosphorus, Nitric acid, silver compounds, silicon compounds, silanes, acid halides. Exothermic reaction with: boron compounds, oxyhalogenic compounds, potassium, sodium, strong oxidizing agents, phosphorus halides, strong reducing agents, acid chlorides, strong acids, silver salt, nitogen dioxide. Risk of ignition or formation of inflammable gases or vapors with: potassium permanganate.
10.4	Conditions to avoid:	Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. Avoid exposure to high temperatures or direct sunlight.

DMSO SDS; Doc# F17-6638-1-B; Effective: 10/11/2017; Supersedes: F17-6638-1-A; Page 5 of 7

	DMSO SDS; Doc# F17-6638-1-B; Effective	<u>: 10/11/2017; Supersedes: F17-6638-1-A; Page 5 of 7</u>
10.5	Incompatible materials:	Strong acids. Strong oxidizing substances. Strong reducing agents. Acid chlorides. Phosphorus halides.
10.6	Hazardous decomposition products:	Fire creates: vapors/gases/fumes of: carbon monoxide (CO); carbon dioxide (CO ₂); nitrous gases (NO _x); hydrogen chloride (HCI); hydroger cyanide (HCN).
	n 11: Toxicological information	
11.1	Information on toxicological effects:	
11.1a	Name:	Dimethyl Sulfoxide (DMSO)
11.1b	Acute toxicity:	LD50 Oral - Rat - 14,500 mg/kg
		LD50 Dermal - Rat - 40,000 mg/kg
11.1c	Skin corrosion/irritation:	Dimethyl Sulfoxide (DMSO)
		Skin – Mild Irritant - 24 hours exposure with 500 mg rabbit.
		Eyes – Mild Irritant - 24 hours exposure with 500 mg rabbit.
		May cause skin irritation with susceptible persons.
11.1d	Serious eye damage/irritation:	Not determined.
11.1e	Respiratory or skin sensitization:	Not determined.
11.1f	Germ cell mutagenicity:	Not determined.
11.1g	Carcinogenicity:	Not determined.
11.1h	Reproductive toxicity:	Not determined.
<u>11.1i</u>	STOT-single exposure:	Not determined.
<u>11.1j</u>	STOT-repeated exposure:	Not determined.
<u>11.1k</u>	Aspiration hazard:	Not determined.
11.11	Information on the likely routes of exposure	•
	(inhalation, ingestion, skin and eye contact):	
<u>11.1m</u>	Ingestion:	None.
<u>11.1n</u>	Inhalation:	None.
11.10	Skin contact:	Causes skin irritation.
<u>11.1p</u>	Eye contact:	Causes serious eye irritation.
11.1q	Symptoms related to the physical, chemical and toxicological characteristics:	No specific symptoms noted.
11.1r	Delayed and immediate effects as well as chronic	Not determined.
11.1s	effects from short and long term exposure: Numerical measures of toxicity (such as acute	Not determined.
	toxicity estimates):	
11.1t	Interactive effects:	Not determined.
<u>11.1u</u> 11.1v	Absence of specific data: Mixtures:	Not applicable. Not applicable.
11.1v 11.1w	Mixture vs. substance information:	Not applicable.
11.1x	Classification by National Toxicity Program (NTP):	Not classified.
11.1x	Classification by International Agency for Research	Not classified.
-	on Cancer (IARC):	
11.1z	Classification by OSHA 13:	Not classified.
11.1ab		
11.100	Other information:	None.
		None.
Section	n 12: Ecological information	None.
Section 12.1	n 12: Ecological information Toxicity:	•
Section 12.1 12.1a	n 12: Ecological information Toxicity: Name:	Dimethyl Sulfoxide (DMSO).
Sectio 12.1 12.1a	n 12: Ecological information Toxicity:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish:
Section 12.1 12.1a	n 12: Ecological information Toxicity: Name:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow)
Section 12.1 12.1a 12.1b	n 12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available):	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout)
Section 12.1 12.1a 12.1b 12.2	n 12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available.
Section 12.1 12.1a 12.1b 12.2 12.2 12.3	n 12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available.
Section 12.1 12.1a 12.1b 12.2 12.2 12.3 12.4	n 12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water).
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5	n 12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined.
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6	n 12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water).
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section	n 12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: n 13: Disposal considerations	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available.
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section	n 12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available.
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section 13.1	n 12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: n 13: Disposal considerations Waste treatment methods:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available. When handling waste, consideration should be made to the safety precautions applying to handling of the product.
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section 13.1	12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: n13: Disposal considerations Waste treatment methods: Description of waste residues and information on	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available. When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste to be treated as controlled waste. Disposal to licensed waste
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section 13.1	12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: 13: Disposal considerations Waste treatment methods: Description of waste residues and information on their safe handling and methods of disposal,	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available. When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local waste disposal authority.
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section 13.1	12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: 13: Disposal considerations Waste treatment methods: Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available. When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local waste disposal authority. Dispose of waste and residues in accordance with local authority
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section 13.1	12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: 13: Disposal considerations Waste treatment methods: Description of waste residues and information on their safe handling and methods of disposal,	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available. When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local waste disposal authority. Dispose of waste and residues in accordance with local authority requirements. Please refer to the information in Section 8 (exposure
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section 13.1	12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: 13: Disposal considerations Waste treatment methods: Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available. When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local waste disposal authority. Dispose of waste and residues in accordance with local authority
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section 13.1 13.1a	12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: 13: Disposal considerations Waste treatment methods: Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available. When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local waste disposal authority. Dispose of waste and residues in accordance with local authority requirements. Please refer to the information in Section 8 (exposure
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section 13.1 13.1a	12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: 13: Disposal considerations Waste treatment methods: Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available. When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local waste disposal authority. Dispose of waste and residues in accordance with local authority requirements. Please refer to the information in Section 8 (exposure controls and personal protection) of the SDS.
Section 12.1 12.1a 12.1b 12.2 12.3 12.4 12.5 12.6 Section 13.1 13.1a	12: Ecological information Toxicity: Name: Ecotoxicity (aquatic and terrestrial, where available): Persistence and degradability: Bioaccumulative potential: Mobility in soil: Results of PBT and vPvB assessment: Other adverse effects: n 13: Disposal considerations Waste treatment methods: Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging: n 14: Transport information	Dimethyl Sulfoxide (DMSO). Acute toxicity - fish: LC50 96 hours 34000 mg/L Pimephales promelas (fat head minnow) LC50 96 hours 35000 mg/L Onchorhynchus mykiss (rainbow trout) No data available. No data available. Mobility in soil is unknown (the product is soluble in water). Not determined. Not available. When handling waste, consideration should be made to the safety precautions applying to handling of the product. Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local waste disposal authority. Dispose of waste and residues in accordance with local authority requirements. Please refer to the information in Section 8 (exposure

DMSO SDS; Doc# F17-6638-1-B; Effective: 10/11/2017; Supersedes: F17-6638-1-A; Page 6 of 7

		: 10/11/2017; Supersedes: F17-6638-1-A; Page 6 of 7
14.4	Packing group:	Not applicable.
14.5	Environmental hazards:	No
14.5a	Is it environmentally dangerous according to UN Model Regulations (IMDG Code, ADR, RID, and ADN)?:	No.
14.5b	Is it a marine pollutant according to the IMDG code?:	No.
14.6	Special precautions for user:	None known.
14.7	Transport in bulk according to Annex II of MARPOL and the IBC code:	Not applicable.
14.7a	Other information:	None.
14.7b	Classification for other modes of transport:	Contact supplier.
Castian	45. Demulatory information	
<u>Section</u> 15.1	n 15: Regulatory information Safety, health and environmental	
13.1	regulations/legislation specific for the substance or mixture:	
15.1a	Regional safety, health and environmental regulations specific for the product in question:	•
15.1b	USA SARA Components (such as 302/311/313):	SARA 311/312: Immediate (Acute) Health Hazard
15.1c	USA Massachusetts Right to Know:	Not listed.
15.1d	USA Pennsylvania Right to Know:	Not listed.
15.1e	USA New Jersey Right to Know:	DMSO (CAS #67-68-5) is listed.
15.1f	USA California Prop. 65 Components:	Not listed.
15.1g	EU Regulation 1907/2006 {REACH}:	
15.1h	Annex XIV substances subject to authorization:	Not listed.
15.1i	Substances of very high concern:	Not listed.
15.1j	Approved code of practice:	Classification and labeling of substances and preparations dangerous
15.1k	Guidance notes:	for supply. Safety data sheets for substances and preparations. Workplace exposure limits EH40. Workplace Environmental Exposure Levels US WEEL.
15.11	EU legislation references:	(EC) No. 1272/2008 on the classification, labelling and packaging of
		substances and mixtures {CLP Regulation}. EC 830/2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.
15.2	Chemical safety assessment:	Not required.
15.2a	Other regulatory information:	None.
	16: Other information	
16.1	Other information:	
16.1a	Date of revision:	10/11/2017
16.1b	SDS number and revision:	F17-6638-1-B
<u>16.1c</u> 16.1d	Supersedes SDS number and revision: Changes made to the previous version of the SDS:	F17-6638-1-A Updated revision letter and date on SDS. Section 2 (Hazards identification): Addition of Hazard classification H227 Flammable liquids (USA only). Addition of P statements P210, P370+P378, P403+P235, P501, P362+P364, Section 9 (Physical and chemical properties): edits/additional information added to: appearance, odor, pH, melting point/freezing point, boiling point, flash point, vapor density, relative density, solubility(ies), viscosity fields. Corrected spelling error in 8.1a; minor edits/additions to select fields.
16.1e	Key/legend to abbreviations and acronyms used in the SDS:	ACGIH American Conference of Governmental Industrial Hygienists. ADN European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway. ADR The European Agreement concerning the International Carriage of Dangerous Goods by Road. ATE Acute Toxicity Estimate. BCF Bio Concentration Factor. CAS Chemical Abstracts Service. CLP Classification, Labelling and Packaging. CMR Carcinogen, Mutagen or Reproductive toxicant.

DMSO SDS; Doc# F17-6638-1-B; Effective: 10/11/2017; Supersedes: F17-6638-1-A; Page 7 of 7

	E	ND OF SDS
	knowledge and belief, accurate and reliab	le as of the date indicated. However, no warranty guarantee or liability, or completeness. It is the user's responsibility to satisfy
DISCLAIMER:		ic material designated and may not be valid for such material used r in any process. Such information is, to the best of the company's
	ants not written out in full elsewhere:	An statements were written out in full.
statem		 ELINCS European List of Notified Chemical Substances. EU European Union. GHS Globally Harmonized System of Classification and Labelling of Chemicals. H Statement GHS Hazard statement. IATA International Air Transport Association. IBC Intermediate Bulk Container. IC50 Half maximal inhibitory concentration. IMDG International Maritime Dangerous Goods. LC50 Median lethal concentration. LD50 Median lethal dose. LogPow logarithm of the octanol/water partition coefficient. MARPOL 73/78 International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. OEL Occupational Exposure Limit. OSHA Occupational Safety and Health Administration (USA). PBT Persistent, Bioaccumulative, and Toxic. PEL Permissible Exposure Limit. RID The Regulations concerning the International Carriage of Dangerous Goods by Rail. SADT Self-Accelerating Decomposition Temperature. SARA Superfund Amendments and Reauthorization Act. SCBA Self-Contained Breathing Apparatus. SDS Safety Data Sheet. STOT-RE Specific Target Organ Toxicity - Repeated Exposure. STOT-RE Specific Target Organ Toxicity - Single Exposure. UN United Nations. USA United States of America. vPvB very Persistent very bioaccumulative. WEEL Workplace Environmental Exposure Levels (USA). All statements were written out in full.
		with the Control of Substances Hazardous to Health Regulations. EINECS European Inventory of Existing Commercial chemical Substances.
	DINOC 3D3, D0C# 1 17-0030-1-D, Ellective.	<u>. 10/11/2017, Superseues. 117-0030-1-A, 1 age 7 017</u>